IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:			
Applicant:	**Adam G. Malofsky et al.**		
Serial No.:	**09/840,859**	**Examiner:**	**D.R. Zirker**
Filed:	**April 24, 2001**	**Art Group:**	**1771**
Title:	**FASTENING DEVICE**	**Atty. Docket**	**7962801/0503762**

DECLARATION OF MARK R. HOLZER

PURSUANT TO 37 CFR 1.132

I, Mark R. Holzer, hereby declare as follows:

I hold a BS in Materials Engineering from the University of Wisconsin and an MS in Materials Science from Northwestern University.

Through September 30, 2003, I held the position of Group Manager – Formulation for Nexicor LLC and had held that position since August 2000. In that capacity I was responsible for Nexicor's adhesive selection and development activities for pre-applied adhesives, reactive adhesive technology development, tape technology development and management of the laminating machine development group.

Prior to joining Nexicor, I had spent more than 11 years in various product development laboratories for 3M Company in its Industrial Tape, Automotive Engineered Systems and Adhesives Divisions.

I am familiar with the above-referenced pending patent application and its teachings. I have been asked to conduct several experiments demonstrating the claimed invention as well as certain comparative experiments outside the scope of the claims.

MATERIALS

1) Fabric strips comprising woven cotton cloth (44x40 thread count) bonded to 0.000285" thick aluminum foil with ethylene acrylic acid (EAA) adhesive and cut to 4.5" width and 20" length.
2) A co-extruded adhesive film consisting of a 0.001" thick ethylene vinyl acetate (EVA) polymer layer co-extruded to approximately a 0.003" thick polyurethane adhesive layer with a silicone coated release paper overlaying the polyurethane adhesive side of the film.

3) Gypsum wallboard sections measuring approximately 6" wide by 10" long with approximately 0.010" thick textured vinyl film laminated to its surface.
4) Double Racetrack Induction tool as described in US patent application 10/449,209 with a coil separation of ¼" and set to deliver 3500J at 600W.

SAMPLE PREPARATION

Test Sample 1: Approximately 18" long, 1½" wide strips of the adhesive film, EVA side down, were laid upon the central portion of the fabric strips, foil side up, such that the centerline of the adhesive film strips overlaid the centerline of the fabric strip. The fabric/film construction was then pressed with a hot iron set to approximately 350^{0}F for a sufficient period of time to bond the film to the fabric. The samples were allowed to cool and the silicone release paper was removed, exposing the polyurethane adhesive film layer.

Test Samples 2-4: circular adhesive pads of ½" and ¾" diameters were cut out of the adhesive film and laminated to strips of the fabric by the same method as mentioned previously for the adhesive strips and the release paper removed. The adhesive pads were laid in a 5" length section of the center area of the fabric strip defined by two imaginary lines parallel with the centerline of the fabric strips and spaced ¾" from the centerline in each direction (the "test area"). As noted in Table 1, two configurations were prepared with each size of the adhesive cut-outs, one providing 30% coverage and the other 60% coverage of the test area.

In an initial set of experiments, the adhesive pads were placed randomly in the test area. However, inconsistent results arose due to the size and density gradient of the electromagnetic field generated by the induction tool which, it is believed, resulted in colder zones in the region furthest from the centerline. Consequently, in an effort to offset the limitation with respect to the tool, and to expose the most adhesive to the electromagnetic energy, the adhesive pads were placed with one edge along the centerline as shown in Figures 1-4.

Table 1.

Sample	Feature Size	Percent Coverage in Central Region
1	Continuous film	100%
2	½" diameter circle	30%
3	½" diameter circle	60%
4	¾" diameter circle	30%
5	¾" diameter circle	60%

Each of the aforementioned modified fabric strips, fabric side up, was subsequently bonded to the vinyl surface of the wallboard sections using the induction tool which was activated for a sufficient period of time to deliver 3500J energy to form the final Samples for testing. The Samples were allowed to cool to room temperature prior to testing. Each Sample was prepared in duplicate.

Testing:

The Samples were tested according to the Pressure Sensitive Tape Council's (PSTC) Test Method number 101 subsection test method F (Single Coated Tapes at 90^0 angle) using a fixture that moves the sample during the test and gives a constant peel angle. The fixture was attached to an Instron testing machine and the wallboard component of the samples were then clamped to the surface of the test fixture. The free end of the fabric was attached to the clamp of the Instron and the load was balanced. The induction tool was placed over the Sample with a ¼" thick piece of acrylic sheet between the tool and the fabric. The tool was activated to deliver 3500J at 600W. After delivery of the energy, the tool and spacer sheet were immediately removed from the Sample and the peel test started. The crosshead traveled vertically at a rate of 30 in./minute thus peeling the fabric from the vinyl sheet. The Samples were peeled to remove at least 5 inches of fabric from the vinyl-covered wallboard; however, only the first five inches of the peel were assessed in each test. Two replicates of each sample were tested in this manner to assess the removability of the tape following induction heat activation.

The surface of the wallboard was inspected after completion of the peel to determine the extent of damage that had been done to it. Table 2 sets for the criteria used to assess each test.

Table 2.

Damage Rating	Vinyl Condition
20	0% vinyl distortion
19	1-5% vinyl distortion
18	6-10% vinyl distortion
17	11-15% vinyl distortion
16	16-20% vinyl distortion
15	21-25% vinyl distortion
14	26-30% vinyl distortion
13	35-40% vinyl distortion
12	41-45% vinyl distortion
11	46-50% vinyl distortion
10	51-55% vinyl distortion
9	56-60% vinyl distortion
8	61-65% vinyl distortion
7	66-70% vinyl distortion
6	71-75% vinyl distortion
5	76-80% vinyl distortion
4	81-85% vinyl distortion
3	86-90% vinyl distortion
2	91-95% vinyl distortion
1	96-100% vinyl distortion

RESULTS

The average results of the two peel tests for each Sample are shown in Table 3. As indicated, a significant amount of the vinyl had been peeled from the surface of the wallboard in those examples with 100% coverage whereas, no or very little visible damage was observed with those embodiments depicting the present invention. Moderate damage was found with those embodiments similar to the claimed embodiments but failing to meet the inscribed circle test. In all tests, the damage to the vinyl was fairly consistent across the full width of the test space.

Table 3.

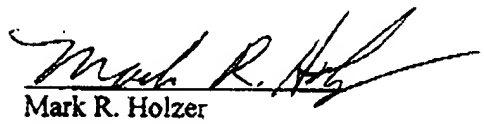
Sample	Feature Size	Percent Coverage in Central Region	Damage Rating
1	Continuous film	100%	12
2	½" diameter circle	30%	20
3	½" diameter circle	60%	19
4	¾" diameter circle	30%	17
5	¾" diameter circle	60%	16

DISUCSSION

As one would expect, the greatest damage was seen for the solid film of adhesive corresponding to 100% coverage. Similarly, with the same adhesive pads, damage was greater for those samples wherein the surface area covered by the adhesive was greater: compare Sample 2 versus Sample 3 and Sample 4 versus Sample 5. However, contrary to one's expectation, markedly less damage occurred with the same coverage, but with smaller adhesive pads (compare Samples 2 and 4 or Samples 3 and 5), and, more importantly, significantly less damage occurred with more surface area coverage, but smaller adhesive pads (compare Samples 3 and 4).

I hereby state that all statements made herein of my knowledge are true, all statements made herein on information and belief are believed to be true and all statements made herein are made with the knowledge that whoever, in any matter within the jurisdiction of the Patent and Trademark Office, knowingly and willfully falsifies, conceals, or covers up by any trick, scheme or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false wiring or document knowing the same to contain any false, fictitious or fraudulent statements or entry, shall be subject to the penalties set forth under 18 USC 1001, and that violations of this paragraph may jeopardize the validity or enforceability of any patent resulting therefrom.

Respectfully submitted



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